

Amendments to the Claims

Please amend the claims as follows:

1. (Cancelled)
2. (Currently Amended)    [[A]]The magnetic resonance imaging method as claimed in Claim 3[[1]], wherein the eddy-current reduction technique employs alternating sweep directions in sampling k-space.
3. (Currently Amended)    ~~A magnetic resonance imaging method as claimed in Claim 1, further comprising:~~  
    ~~the step of acquiring the successive sets of magnetic resonance signals including successively scanning respective sets of points in k-space in an undersampled fashion such that the ensemble of successive sets cover the entire portion of k-space at full sampling density,~~  
    A magnetic resonance imaging method to produce successive magnetic resonance images of a region of a subject comprising the steps of:  
        exposing the body of a subject to a uniform magnetic field,  
        obtaining a series of successive magnetic resonance signals of the region of the subject by steady-state free precession imaging,  
        acquiring successive sets of the magnetic resonance signals in the series by successively scanning respective sets of points in k-space in an undersampled fashion such that the ensemble of successive sets cover the entire portion of k-space at full sampling density, the step of acquiring including employing an eddy-current reduction technique,  
        obtaining successive updates of a training set of magnetic resonance signals from the magnetic resonance signals by further acquisition of a central portion of k-space at full sampling density,  
        updating the undersampled sets of magnetic resonance signals using further undersampled scans of the entire k-space,  
        reconstructing a baseline image from the training data,

identifying a distribution of a likelihood of changes in the successive magnetic resonance images from the training data, in the space spanned by geometrical space,

reconstructing successive magnetic resonance images from the respective sets of undersampled magnetic resonance signals on the basis of the identified distribution of likelihood of changes, and wherein

the step of acquiring including acquiring the magnetic resonance signals by way of a receiver antennae system having a spatial sensitivity profile, and

the step of reconstructing further including reconstructing the successive magnetic resonance images from the respective sets of undersampled magnetic resonance signals based in part on the sensitivity profile of the receiver antennae.

4. (Cancelled)

5. (Currently Amended) [[A]]The magnetic resonance imaging method as claimed in Claim 3 [[1]] further comprising the step of reconstructing successive magnetic resonance images from the respective sets of undersampled magnetic resonance signals including utilizing a reduced field of view, where changes in image contents are assumed to take place.

6. (Currently Amended) [[A]]The magnetic resonance imaging method as claimed in Claim 3 [[1]], wherein an elliptical k-space shutter is applied.

7. (Currently Amended) [[A]]The magnetic resonance imaging method as claimed in Claim 3 [[1]], wherein navigator-based volume tracking is applied.

8. (Cancelled)

9. (Cancelled)

10. (Currently Amended) The computer application in accordance with claim 14 [[9]] wherein the magnetic resonance signals are acquired using a receiver antennae system having a spatial sensitivity profile.

11. (Currently Amended) The computer application in accordance with claim 14 [[9]] further including instructions for obtaining successive updates of a training set of magnetic resonance signals from the magnetic resonance signals by further acquisition of a central portion of k-space at full sampling density.
12. (Previously Presented) The computer application according to claim 11 including instructions for reconstructing a baseline image from one of the undersampled signals, the training set of signals, and data acquired separately during periods with little or no motion.
13. (Previously Presented) The computer application according to claim 12 including instructions for reconstructing the successive magnetic resonance images from the magnetic resonance signals based in part on the baseline image.
14. (Currently Amended) A computer application stored on a computer-readable medium for producing successive magnetic resonance images of a region of a subject, the computer application comprising executable instructions to:
  - obtain a series of subsequent magnetic resonance signals of a region of a subject by steady-state free precession imaging,
  - apply an eddy-current reduction technique, such as by alternating the sweep directions of sampling in k-space,
  - acquire a set of magnetic resonance signals in an undersampled fashion, and
  - reconstruct successive magnetic images of the region from the successive sets of magnetic resonance signals,

~~The computer application according to claim 9 further including instructions for identify[[ing]] a distribution of a likelihood of changes in the successive magnetic resonance images from a ~~from the~~ training set in the space spanned by geometrical space or geometrical space and temporal frequency wherein the instructions to reconstruct ~~for reconstructing~~ the successive magnetic images of the region from the successive sets of magnetic resonance signals are based in part on the distribution of likelihood of changes.~~

15. (Currently amended) The computer application according to claim 14 [[9]] wherein the instructions to reconstruct~~for reconstructing~~ the successive magnetic images of the region from the successive sets of magnetic resonance signals include utilizing a reduced field of view where changes in image content are assumed to take place.